OKLAHOMA

Current Farm Economics

Livestock and Livestock Products

The Agricultural Situation

Farm Real Estate

Feed

Vol. 26, No. 5
October, 1953

Current Farm Economics

OKLAHOMA

Vol. 26 October, 1953 No. 5

Prepared bi-monthly by the Department of Agricultural Economics and Extension Economists, Oklahoma A. & M. College
Mailed free upon request

LEO V. BLAKLEY, Editor PETER NELSON, Dept. Head

CONTENTS

The Agricultural Situation
General
Demand 73
Price 73
Income 74
Crops
Cotton 75
Wheat 76
Feed 77
Livestock and Livestock Products
Beef Cattle 79
Dairy 80
Hogs 81
Poultry 82
Sheep, Lambs, and Wool 83
Farm Real Estate 84
What Two Main Factors Affect Cotton and Wheat Returns In Southwestern Oklahoma? 86
How Variable is the Income From Cotton and Wheat In Southwestern Oklahoma? 89
Tables of Prices and Price Indexes 92

DIVISION OF AGRICULTURE
Oklahoma A. & M. College, Stillwater

Oklahoma Agricultural Experiment Station
A. E. Darlow, Director
Louis E. Hawkins, Vice Director

Oklahoma Agricultural Extension Service
County Agent Work
Shawnee Brown, Director

Cooperative extension work in agriculture and home economics, Oklahoma Agricultural and Mechanical College and United States Department of Agriculture, cooperating. Distributed in furtherance of Acts of Congress of May 8 and June 30, 1914.

The Agricultural Situation

GENERAL

Demand

United States consumers do not appear to be greatly troubled by the soft spots which are developing in our economy. Through August, their spending has been at very high levels. In fact, consumers have been going further into debt for some of these purchases.

These actions are encouraging when we look at the downward trend of the stock market and the growing accumulation of inventories. From all indications consumers will continue to spend at this high rate through Christmas. After this it's anybody's guess. The scheduled personal income tax reduction should give consumers some additional purchasing power but this may be offset in part by lower earnings in some lines such as farm machinery.

Industrial production has been holding up very well. Business outlays for new plants and equipment have been running high in the third quarter but expectations are for some decline in those expenditures during the last three months of 1953.

Construction activity has also been at or near record rates, but there are signs of some slowing down here, too. New housing starts have shown a downward trend; however, enough construction has been started to keep activity in this area high for some months to come.

Perhaps one of the weakest spots in our economy is in inventory accumulation. By the end of July, the Department of Commerce estimated business inventories at 78 billion dollars. This was up more than 5 billion dollars from a year ago. From all indications, inventories have continued to increase since that time. If these inventories begin to be liquidated, then demand at the manufacturing level will be sharply curtailed as long as the liquidation process continues. The effect is usually short lived, but it can be a potent force during the six months or so usually involved.

Price

Agricultural prices in the U. S. have continued to move gradually downward. On September 15, the index of prices received by United States farmers was 256 percent of the 1910-14 average—down two points

from August.[1] Lower prices of cattle, lambs, and truck crops were responsible for most of the decline.

Prices paid by farmers were also down. Lower prices of food, feed, and livestock caused the parity index to decline two points to 277 percent of the 1910-14 average. Since prices paid and prices received dropped about the same amount, the parity ratio remained at 92—the same as a month earlier. This is 9 percent below a year ago.

As an aggregate, agricultural prices in Oklahoma during September increased very slightly over the August level. With prices paid by farmers going down, this meant that the index of purchasing power of Oklahoma commodities became more favorable. The index of purchasing power climbed a little more than one point to 90.4. This is the most favorable relationship of Oklahoma prices since May of this year, but still far below the level of a year earlier (107.2).

Most of the price advances were the moderate seasonal increases characteristic of this season of the year. Price increases occurred for grains, cotton and cottonseed, dairy products, and chickens and eggs. However, not all the commodities included in these groups had the same directional price change. For example, in the grain group the higher prices of wheat, oats, barley, and rye more than offset the 7 percent decline in the price of corn and the 10 percent decline in the price of grain sorghums. The same thing was true in the cotton and cottonseed group with higher lint prices more than offsetting lower seed prices.

Only two commodity groups—meat animals and miscellaneous crops—registered price declines and some of these declines were seasonal. In the first group, prices of cattle and calves were down 7 and 8 percent, respectively. Sheep prices were off about 10 percent and lamb prices dropped 12 percent. Only hog prices were higher—about 3 percent. In the miscellaneous crop group, lower prices of sweet potatoes and hay contributed most of the decline, with hay prices averaging about 8 percent below August levels.

Income

Cash receipts from farm marketings continue below the 1952 level. Through August 1953, farmers had received about 17.7 billion dollars, which was down about 6 percent from the same period of 1952.[2] Lower

[1] *Agricultural Prices*, B.A.E., U.S.D.A., September 1953, p. 1.
[2] *The Farm Income Situation*, B.A.E., U.S.D.A., July-August 1953, p. 1.

agricultural prices were responsible for the decline since the volume of marketings was higher than a year earlier. The largest drop occurred in receipts from the sale of meat animals.

The income position of the farmer does not look especially encouraging. It takes price x quantity to give gross income. Agricultural prices probably will no more than hold at present levels (with the usual seasonal variation) and the volume of marketings may not increase too much because of the establishment of allotments or quotas for some crops. Thus, substantially higher gross farm income does not appear probable in the months ahead.—*Leo V. Blakley.*

Crops

COTTON

According to current estimates the 1953-54 United States supply of cotton will be about 21 million bales or about one-sixth more than last year's supply. The total supply of cotton for the marketing year is based on an estimated 1953 crop of about 15.6 million bales and a carryover on August 1, 1953, of 5.5 million bales. It is estimated that the disappearance will be between 12.2 and 13.5 million bales during the 1953-54 crop marketing year, resulting in a carryover of between 7 and 9 million bales on August 1, 1954.[1]

Cotton prices in recent weeks have fluctuated within a range slightly below or slightly above loan values. September 15 prices received by farmers for upland cotton averaged 33.09 cents per pound. For the same date, the parity price for upland cotton was 34.35 cents per pound, or the same as a month earlier. In view of the existing price and loan value relationships for different qualities of cotton, a recent statement on orderly marketing made by the Secretary of Agriculture may be timely:

> As we enter the period when cotton will be harvested in heaviest volume, it is very important that producers market their crop in an orderly way. Producers themselves can do a lot to promote continued stability by avoiding unnecessary marketing during the September-November period. In most years about four-fifths of the crop is harvested during those months, and the danger of market congestion is greatest at that time. The experience of other years has proved definitely that orderly marketing pays in better returns to the producer.[2]

---

[1] *The Demand Price Situation*, B.A.E., U.S.D.A. September 28, 1953, pp. 16-17.

[2] *Weekly Cotton Market Review*, P.M.A., U.S.D.A. (Dallas 1, Texas) Vol. XXV, No. 7, September 18, 1953.

Although prospects for the immediate future indicate an increase in the cotton supply and carryover, the cotton supply situation may very well change sharply by the close of next year's marketing season. This seems possible in view of the fact that under present statutory law the cotton allotment for 1954 will be about 17.9 million acres. Also, continued efforts to stimulate cotton exports are being made by a number of farm organizations.—*Raymond B. Marshall.*

WHEAT

1953-54 Crop Year.—Preliminary estimates indicate that total production for the 1953 crop should be around 1,203 million bushels. The crop would be 7 percent smaller than the 1952 crop, but 10 percent larger than the 10-year average. Total supplies for 1953-54 are estimated at 1,765 million bushels. This consists of a carryover on July 1, 1953, of 559 million bushels, the 1953 crop of 1,203 million bushels, and imports of about 5 million bushels.

Domestic disappearance for 1953-54 is estimated at about 700 million bushels. With expected exports of 260 million bushels, the carryover on July 1, 1954 should be around 800 million bushels.

1954-55 Crop Year.—A smaller wheat crop is anticipated in 1954 with the approval of marketing quotas by wheat farmers. The total production should be approximately 950 million bushels if the seeded acreage equals the national allotment of 62 million acres and if yields equal the 1943-52 average.

The total supply for 1954-55 would be approximately 1,750 million bushels and would be nearly equal to the record of the current marketing year. This estimate is based on the above 1954 crop estimate and an expected carryover of 800 million bushels on July 1, 1954.

Approximately 700 million bushels of wheat are expected to be used for domestic purposes (food, seed, industrial, and feed) in 1954-55. This would leave 1,050 million bushels for export and carryover. Present estimates indicate that exports will continue below the average of recent years with recovery of domestic production in importing countries and expected large supplies in exporting countries. United States exports in 1954 will probably be between 200 and 300 million bushels. The carryover on July 1, 1955 should be about the same as the estimated carryover for July 1, 1954.

Under existing legislation, producers are assured of support prices if they plant within their acreage allotments. A recent announcement

by the United States Department of Agriculture placed the minimum support price at $2.20 per bushel on a national level. This is 90 percent of the September 15 parity price of wheat.—*Howard S. Whitney.*

Feed

Conditions appear favorable for an adequate supply of feeds for the year ahead in spite of declines in the prospects for grain, hay, and oilseed crops during August.

Continued dry weather during August in the western and southwestern fringe of the cornbelt cut the prospects for that crop 134 million bushels, or about 4 percent (Fig. 1). This was partly offset by improvement in the prospect for sorghum grains in Texas.

The October 1 estimate for total feed grain production this year was 118 million tons. With the relatively large carryover from last year and some decrease in the number of grain-eating animals, this would provide a supply of more than a ton of concentrate feeds per animal unit .This is about a third more than is ordinarily used unless winter weather is unusually severe.

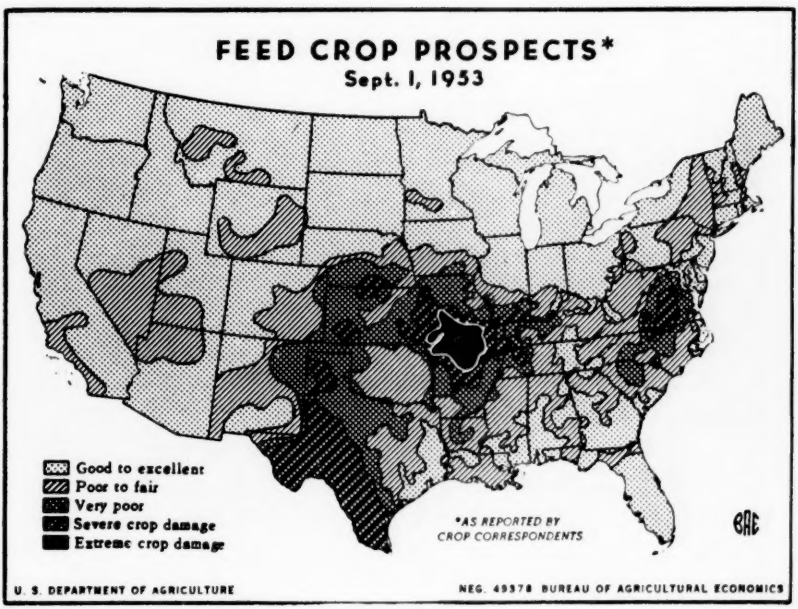

Figure 1

The large supply of feed grains will probably keep prices from rising more than seasonally. The U. S. average corn price September 15 was $1.50 per bushel, which is 8 cents below support levels for the 1953 crop. Efficient cattle feeders may again find it possible to make a profit on their feedlot operations since prices of choice slaughter steers have declined less than prices of stockers and feeders. If the feedlot operators find this to be true, their demand may help to strengthen the sagging Oklahoma stocker and feeder cattle prices.

Hay crop prospects were estimated October 1 at 106 million tons. This amount plus a 15-million-ton carryover would provide more than 3000 pounds per hay-consuming animal unit. Usual consumption is about 2800 pounds. Hay quality is generally good and the percentage of alfalfa in the total is up.

Oilseed tonnage is about the same as in 1952. Production of wheat and other food grains is relatively high. This practically assures an adequate supply of proteins and byproduct feeds from plant sources.

Pastures in general are furnishing poor grazing (Fig. 2). Chief shortage areas are in Missouri, southwest Texas, eastern Kansas-Nebraska, and more recently, the Virginia-Carolina area. Farmers in parts of

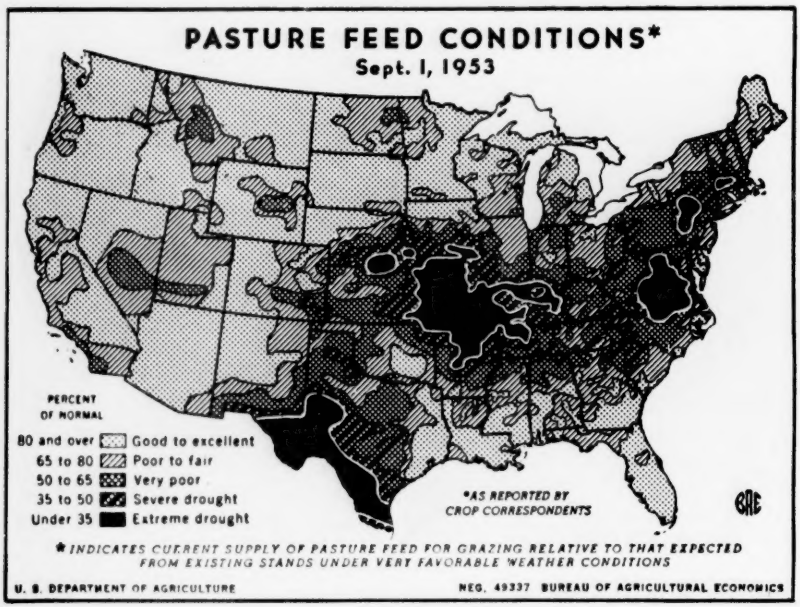
PASTURE FEED CONDITIONS*
Sept. 1, 1953
PERCENT OF NORMAL
80 and over Good to excellent
65 to 80 Poor to fair
50 to 65 Very poor
35 to 50 Severe drought
Under 35 Extreme drought
*AS REPORTED BY CROP CORRESPONDENTS
* INDICATES CURRENT SUPPLY OF PASTURE FEED FOR GRAZING RELATIVE TO THAT EXPECTED FROM EXISTING STANDS UNDER VERY FAVORABLE WEATHER CONDITIONS
U. S. DEPARTMENT OF AGRICULTURE
NEG. 49337 BUREAU OF AGRICULTURAL ECONOMICS

Figure 2

Oklahoma have already seeded some acreage of fall and winter pastures and have declared their intentions of sowing considerable acreages of wheat, rye, vetch, barley, and oats for grazing purposes as soon as surface moisture conditions permit.

Oklahoma range condition October 1 was reported at 68 percent of normal as compared to 58 percent last year and 80 percent for the 10-year average 1942-51. The weighted average condition for the Western range states was 73 percent of normal as compared to 72 last year and 81 for the 10-year average.

Except for animal-source proteins—mainly tankage and meat scrap —feed prices are expected to remain somewhat lower than those of last year. Feed prices paid by U. S. farmers September 15 average 13 percent below those of a year earlier and 5 percent below the 1947-49 average. Oklahoma farmers in September were paying $3.15 per hundredweight for cottonseed meal in contrast to $5.60 at the same time last year. Similarly, 18-percent dairy ration cost Oklahoma milk producers only $3.85 a bag as compared to $4.55 last year. However, reduced feed prices are no assurance of farm profits; the thing that counts is the relation of feed costs to the price of the product the farmer makes to sell. Thus, when both prices are declining, careful management is necessary to keep profits up.—*F. L. Underwood.*

Livestock and Livestock Products

BEEF CATTLE

We have more cattle on farms in the United States today than we have ever had before—an estimated 93.7 million head. We have more people to feed than we have ever had in history, yet cattle production is increasing more rapidly than the population. Average consumption of beef per person this year is estimated at 73 pounds or more per capita; last year's consumption was 61 pounds. For all red meat, a total of 148 pounds per capita is expected to be available for consumption in 1953. This is the highest since 1947 and except for 1946 and 1947 is above any other peace-time year since 1911.

The beginning of this year marked the fifth one of continuous increase in cattle numbers. In previous cycles the peak has not come earlier than the seventh year. Some conjectural estimates say that the present peak was reached this year; others say that it will not be reached before January 1, 1955. Therefore, indications are that slaughter will continue high for the next two or three years. However an increasing

proportion of total slaughter will likely include grass cattle and calves. If true, this means that the total beef supply will expand less than might be indicated by the increasing numbers. Considered estimates indicate that by 1956—provided expansion of numbers continues to 1955 or 1956—we might have 73 pounds of beef per person. This is equal to our 1953 per capita consumption.

Besides supply, the demand for beef is also an important determinant of cattle prices. Although the demand for beef has continued strong, any weakening of demand would produce further price drops.

Prices of top grades of cattle in the near future appear likely to hold up better than the lower grades. Fed cattle have been marketed at a faster rate than last year and feedlots have refilled at a slower rate. Supplies of top grades will probably decline until equal to or below a year ago, according to the Bureau of Agricultural Economics. As a result their prices may stay up. Prices of lower grades of cattle are expected to continue low this fall by seasonally large supplies and by a relatively weak demand for feeder cattle.—*Robert L. Tontz.*

DAIRY

Since both incomes and population are rising, the total demand for dairy products remains favorable.

Estimates are that the per capita consumption of fluid milk and cream in 1953 will be about 352 pounds—the same as last year.[1] The consumption of fluid skim milk is up although the consumption of non-fat dry milk is down somewhat. The consumption of butter has not decreased this year, probably because of larger utilization in the school lunch program.

The supply of dairy products has been increasing relatively more than the demand, however. The number of milk cows on farms in June was between 2 and 3 percent larger than a year ago. This increase was brought about largely by the drop in beef prices which made dairy production more attractive. In some areas this adjustment has not been completed; consequently, further increases in numbers and in dairy production appear probable.

Price supports at present levels on selected dairy products with the now low beef prices will result in very large milk production. The

[1] *The Dairy Situation,* B.A.E., U.S.D.A., July-August 1953, p. 3.

U.S.D.A. will be purchasing a major share of the increase. In August alone, the Department purchased the equivalent of over 50 percent of the total non-fat dry milk solids production for the month.[2] At present prices, this general surplus situation will likely continue and may even get worse.

Oklahoma fluid milk production has followed the national increase. The increase in production has been large enough to result in a larger proportion of the milk going into Class II (manufacturing) uses. Thus, even though the Class I prices have held up well, the larger quantities and lower prices of Class II milk have lowered the blend prices to the farmers.

Seasonally, this downward trend may be slowed down or reversed. However, the improvement in prices during the coming months will be less than is usual for this period of the year.—*A. W. Jacob.*

HOGS

Hog prices are declining seasonally but are expected to average above prices for corresponding periods last fall. Demand for pork has remained strong while the supply has been reduced. A reduction of 10 percent in the spring pig crop has accounted for the decrease in supply. Reports on breeding intentions indicate that a substantial increase in supply cannot be anticipated in the near future. Farmers reported that 5 percent fewer sows will farrow this fall than in the fall of 1952.

In view of high hog prices the last few months, a moderate increase in production was anticipated this fall. Supplies and prices of cattle may still be a disturbing factor to hog producers. Other factors which may have contributed to the lower production are price supports on corn and apprehensiveness as to general economic conditions.

Hog slaughter the last several months has been around 15 percent below a year earlier. It is estimated now that the total output of pork for 1953 will be around 10 billion pounds as contrasted to 11½ billion in 1952. This means there will be about 62 pounds per capita this year as compared with 72 pounds last year. However the increase in beef supplies will more than replace the reduction in pork, and total consumption of red meats will be greater than last year.

---

[2] Based on information in *Evaporated, Condensed, and Dry Milk Report*, B.A.E., U.S.D.A., September 30, 1953, pp. 1 and 3.

The present price relationship between beef and pork again demonstrates that competition between the two products is often overestimated. With lower relative beef prices, consumers do not always freely substitute beef for pork. A strong preference for only one of the products is shown by some consumers. Other consumers desire variety in their diet but tend to balance expenditures for the two products in response to relative prices. It appears now that hog producers may have been too concerned about this latter group of consumers when making production decisions. This may be largely responsible for the reduction in the number of sows to farrow this fall.—*Howard S. Whitney.*

POULTRY

All indications justify an optimistic attitude for poultry producers for the coming six months. The supply of eggs for the last three months of 1953 will approximate the 1952 output for the same period. The number of layers is likely to be 2 percent under 1952, but the increase in the rate of lay will counterbalance this reduction.

There are no indications that demand in the last quarter of 1953 has weakened as compared with 1952. In fact, there are elements in the market which indicate that it has improved. Using employment alone, which has reached a record high, demand could easily be stronger this fall.

However lower meat prices, particularly beef, will influence the demand for eggs and poultry meats. Cheaper beef prices will permit consumption of greater quantities of beef and perhaps other food items. If poultry products are complementary to, rather than substitutes for, beef, then poultry producers could expect some strengthening in the demand for their products. But in general, poultry products may be competitive with beef.

A complementary relationship may hold this fall for turkeys. Thus with a smaller supply in 1953, turkey prices might be expected to show some advancement over the past season. However, the large storage stock may tend to offset the advantages of increased income and smaller supplies. It was anticipated earlier that a large amount of the 52.3 million pounds on hand July 1 would move into consumption channels by the beginning of the current market season. Apparently this has not been done. No doubt the depressed beef prices have been a factor. It is also likely that storage operators were anticipating a greater than

13 percent reduction in the year's output since earlier expectations were for a 25 percent reduction.

Broiler producers are likely to find the next six months favorable price-wise for their operation. Little expansion was made this season because of tighter credit policies. As a result, production has been very stable, and prices have been favorable because feed prices have not been as high. Feed prices will likely decline throughout the remainder of the season since the feed demand of cattle feeders will not be as strong as usual.—*K. C. Davis.*

SHEEP, LAMBS, AND WOOL

The U. S. Department of Agriculture reported 4 percent more ewes on farms this year than last. The percentage lamb crop reached a record with a 90 percent crop. The lamb crop is estimated at 19.7 million head—the largest in 6 years, but small compared with years prior to 1948.

An increase in lambs raised, along with an increase in ewe numbers, often would indicate an expansion in sheep numbers, but such does not seem to be the case for 1954. Instead, the high rate of slaughter indicates a small reduction in sheep numbers. Slaughter buyers are somewhat more aggressive than feeder buyers; the latter being cautious in view of the downward trend in livestock prices during the past year. Lamb prices have held up fairly well over the past year even in the face of sharply lower beef prices, and it is expected that: (a) consumer demand for meat will remain strong, and (b) the price outlook for lamb and mutton will be even better than for beef.

Over the past 50-odd years, the per capita consumption of lamb and mutton averaged 6.2 pounds per year. In 1949 consumption fell to 4.1 pounds per capita and has remained below 5 pounds since. Consumption is expected to be around four pounds this year. At this small per capita consumption, there may be less substitution of beef for lamb and mutton if beef prices continue to decline.

Wool prices this season have been relatively stable. Domestic growers have been receiving prices slightly above the national average loan rate of 53.1 cents.

Consumption of wool in the U. S. during the early months of 1953 was well above a year earlier. The consumption of apparel wool during May in the U. S. was the highest for any month since early

1951. For the world as a whole, consumption of wool is at a rate equal to or a little above world production.—*L. A. Parcher.*

Farm Real Estate

Statewide and national indexes of the Bureau of Agricultural Economics show further declines in land values and volume of sales during the past year. The index of Oklahoma land values in July 1953, was 247 percent of the 1912-14 average—down 5 percent from a year earlier. The revised index (1947-49=100) was 132. The average decline for United States land values was 4 percent.

Voluntary sales of farms in Oklahoma for the year ending March 15, 1953, equaled 43 per 1,000 farms. This was a decline of 14 percent from the previous year. The U. S. average of 34 voluntary sales per 1,000 farms in 1953 was down 8.5 percent from 1952.

Farmers Major Buyers and Sellers

Active farmers bought 65 percent of all farms sold in 1951 and 1952. Nonfarmers made about 31 percent of all purchases during the past two years. Farmers accounted for more than two-thirds of all sales during 1951 and 1952.

Credit Sales Up

Sales data on the financing of farm purchases during the winter and early spring of 1952-53 show that a slightly higher proportion were credit-financed than during the same period a year earlier. Down payments averaged slightly less. About 59 percent of the sales during 1952-53 were credit financed. The debt on these purchases averaged 57 percent of the purchase price. On about one-fifth of the credit purchases the debt equaled 75 percent or more of the purchase price.

Revised Value Index

A revised farm real estate value index series has been published by the B.A.E. The new series reflects a shift to a more recent base period as well as more recent weights. Except for the 11 Western states, no change has been made in state indexes on the 1912-14 base from 1912 through 1940.

Prior to the current revision, acres in farms, as reported by the 1925 Census, was used to weight the dollar values for crop reporting dis-

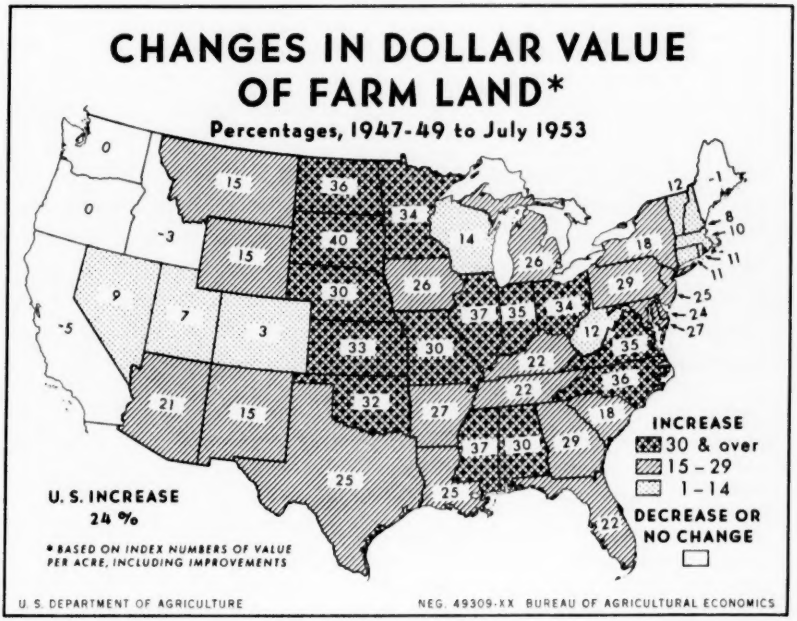

Figure 3

tricts, states, and geographic divisions. As similar weights were not available within the 1947-49 period, an average of acres in farms as reported by the 1945 and 1950 Census was used as the closest approximation for the revised series. These new weights were introduced for 1940 and subsequent years.

Old and New Indexes Compared

The principal effect of the new 1945-1950 weights on the national index is to reduce the weight assigned to the 11 Western states and to increase that given to the South Atlantic, the East South Central, and the West South Central regions. As land values in the latter areas have shown somewhat wider fluctuations than elsewhere, the revised national index is slightly more responsive to cyclical swings in values. The base period values for the United States for the 1947-49 index are about 50 percent higher than for 1912-14.

The percentage changes in dollar values of farm land by States from 1947-49, the new base period, to July 1953, are shown in Figure 3. —*Robert L. Tontz.*

What Two Main Factors Affect Cotton and Wheat Returns In Southwestern Oklahoma?

Returns per acre of any crop are affected by many factors, but in a given area where operating practices are quite similar, the two most important factors are yield and price. To approximate the net effect of these two factors, costs were determined for two methods of cotton production: (1) The usual method based on hand chopping and harvesting, and (2) the improved method based on mechanized cotton production except for hand harvesting the first time over.

Table 1 on fixed and variable costs of producing cotton by the two methods was constructed on the basis of actual farm records taken from Caddo, Comanche, Cotton, Greer, Harmon, Jackson, Kiowa, and Tillman counties in southwestern Oklahoma. Since fixed costs do not change for a given year with yield, total fixed costs are shown on an acre basis. However, since variable costs change with yield they are shown on a per pound of lint basis.

Tables 2 and 3 show the net returns from cotton for the two methods and are based on the costs included in Table 1. Note that under the usual method of handling cotton, a 100-pound yield of lint does not pay the cost of production until the price of cotton approaches 32 cents per pound (Table 2). At 21 cents per pound, a yield of almost 200 pounds of lint is required to pay the costs.

Under the improved method (Table 3) a yield of 100 pounds lint at a price between 21 and 25 cents will pay the total costs. A yield of 150 pounds lint will pay a net return per acre of $3.09 at a price of 21 cents.

Since only the variable costs increase with yield and fixed costs remain constant, a slight increase in yield or a few cents change in price rapidly multiplies the net returns.

The proportion of fixed to variable costs as well as total costs per acre vary with the kind of crop. Likewise the net returns per acre vary with kind of crop. Some crops tend more toward use of capital and less toward the use of labor than others. Thus even under the improved method of handling cotton, more labor is required than is needed for the usual method of handling wheat. Cotton uses labor and capital more intensively than is the case with wheat. More than

Table 1.—Costs of Producing Cotton in Selected Counties of Southwestern Oklahoma Based on a Given Set Of Prices.

(Dollars)

	Variable Costs (per pound of lint)					Fixed Costs (per acre)
	Snapping	Stripping	Hauling	Waste	Ginning	
Usual method	0.0759	------	0.0069	------	0.0223	14.51
Improved method	0.038	0.0051	0.0069	0.02023	0.02266	10.00

SOURCE: W. F. Lagrone, *Cotton Growing in Southwestern Oklahoma*, Okla. Agri. Exp. Sta. Bul. No. B-350. June 1950.

Table 2.—Net Returns Per Acre of Cotton as Affected By Yield and Price—Usual Method.

(Dollars)

Price per lb. of lint	Yield (pounds)						
	50	100	150	200	250	300	350
21 cents	—10.77	—7.04	—3.31	.43	4.17	7.90	11.63
25 cents	— 9.27	—4.04	1.19	6.43	11.67	16.90	22.13
28 cents	— 8.15	—1.79	4.57	10.93	17.29	23.65	30.01
32 cents	— 6.65	1.21	9.07	16.93	24.79	32.65	40.51

Table 3.—Net Returns Per Acre of Cotton as Affected By Yield and Price—Improved Method.

(Dollars)

Price per lb. of lint	Yield (pounds)						
	50	100	150	200	250	300	350
21 cents	— 5.63	—1.27	3.09	7.45	11.82	16.18	20.54
25 cents	— 4.13	1.73	7.59	13.45	19.32	25.18	31.04
28 cents	— 3.01	3.98	10.97	17.95	24.94	31.93	38.92
32 cents	— 1.51	6.98	15.47	23.95	32.44	40.93	49.42

Table 4.—Costs of Producing Wheat in Selected Counties; Southwestern Oklahoma.
(Dollars)

Variable Costs (per bushel)		Fixed Costs
Harvesting	Hauling	(per acre)
0.0205	0.0153	7.15

SOURCE: W. F. Lagrone, *Cotton Growing in Southwestern Oklahoma*, Okla. Agri. Exp. Sta. Bul. No. B-350. June 1950.

Table 5.—Net Returns Per Acre of Wheat as Affected By Yield and Price.
(Dollars)

Price per bushel	Yield Per Acre (bushels)							
	5	8	10	12	14	16	18	20
$1.50	—2.38	.51	2.54	4.42	6.30	8.32	10.20	12.08
1.75	—1.56	1.84	4.21	6.42	8.63	10.99	13.20	15.41
2.00	.73	3.16	5.89	8.42	10.95	13.67	16.20	18.73
2.25	.10	4.48	7.57	10.42	13.27	16.35	19.20	22.05

90 percent of the acre cost of producing wheat is fixed; whereas less than half the total acre cost of producing cotton under the improved (mechanized method) is fixed (Tables 1 and 1)

The fixed and variable costs of producing wheat are shown in Table 4 and the net returns from wheat are shown in Table 5.

What is considered a relatively low yield of wheat (8 bushels per acre, Table 5) can be expected to pay the production costs at a price as low as $1.50 per bushel. But even the fairly high yield of 20 bushels at a price of $2.25 will not yield a net return per acre more than half as high as a yield of 350 pounds of lint cotton (compare Tables 5 and 3.)

Emphasis in this discussion has been limited to a consideration of the two main factors that affect the returns to cotton and wheat, namely price and yield. It should be remembered that the best yielding cotton land is not necessarily the best yielding wheat land. As a matter of fact, good wheat land in the southwest is often very poor cotton land. There is, therefore, a very definite place in the farm business of this area for both crops.—*Peter Nelson.*

How Variable Is The Income From Cotton and Wheat In Southwestern Oklahoma?

If two crops can be grown equally well on the same farm and if about the same average income over a period of years can be obtained from either crop, then a farmer might be indifferent as to which crop he elects to produce. However, if the income from one of these crops is very high one year and very low the next as compared with the other crop (but with equal average incomes) then the farmer would prefer to grow the crop which gave him the more stable income.

The problem which the farmer faces is not quite as simple as this. But considerable insight can be gleaned from an analysis of the variability of yields of the various crops when these, in turn, are expressed in fluctuating incomes.

An analysis of yield variability covering the years 1939 through 1952 was made for Crop Reporting District VII, and the relevant figures are reported in Table 1. This district includes Caddo, Comanche, Cotton, Greer, Harmon, Jackson, Kiowa and Tillman counties.

It is fairly easy to compare the variability of yields of wheat, oats and grain sorghums because they are expressed in terms of bushels per acre. It is not so easy to compare the variability of the yields of these crops expressed in bushels with the variability of the yields of cotton expressed in pounds of lint per acre.

The coefficient of variation permits a direct comparison of the variability of cotton and grain yields. The fluctuations of yields are large when the coefficient of variation is large and, conversely, the fluctuations are small when the coefficient of variation is small. A comparison of the coefficients in the third column of Table I indicates that cotton yields vary about as much from one year to the next as do wheat yields. However, compared with grain sorghum yields, cotton yields are somewhat more variable from one year to the next. Compared with oats yields, cotton yields fluctuate less from one year to the next.

But this is only a part of the story. Stable yields are desirable only insofar as they give relatively stable incomes. Suppose that the income from cotton and the income from wheat were to be compared on the basis of the range of yields which might be expected in 2 out of

Table 1.—Yield Variability Statistics of Selected Crops in Oklahoma Crop Reporting District VII.

	Average yield per planted acre	Standard deviation	Coefficient of variation	Range of yields expected in 2 out of 3 yrs.	Range of yields expected in 19 out of 20 yrs.
Cotton (pounds of lint)	170.4	+50.2	.29	120.2—220.6	70.0—270.8
Wheat (bu.)	10.9	+ 3.1	.28	7.8— 14.0	4.7— 17.1
Grain sorghums (bu.)	13.4	+ 3.2	.24	10.2— 16.6	7.0— 19.8
Oats (bu.)	15.2	+ 5.5	.36	9.7— 20.7	4.2— 26.2

SOURCE: Based on or estimated from data supplied by the Bureau of Agricultural Economics, U.S.D.A., Oklahoma City, Oklahoma.

3 years (fourth column in Table I). Cotton yields may be expected to vary from about 120 to 220 pounds of lint per planted acre, while wheat yields may be expected to vary from 7.8 to 14.0 bushels per planted acre. Assume also that the price of cotton will be about 28 cents per pound and that the price of wheat will be about $2.00 per bushel.

These yields and prices may be used along with net returns data in the preceeding article (Tables 2 and 3, page 87) to obtain the variations in income from each of these crops for the 2 out of 3 years probability level. At 28 cents per pound, the lower cotton yield of 120 pounds of lint per acre will give a net income of $6.78 per acre (using the improved method) * This compares with a net income of $3.00 per acre for the lower wheat yield of 7.8 bushels per acre at a price of $2.00 per bushel. The upper cotton yield of 220 pounds of lint will give a net income of $20.75 per acre as compared with $10.95 per acre from a 14 bushel wheat yield.

Thus at the given prices, the income from cotton will range from $6.78 to $20.75 per acre in 2 out of 3 years as compared with $3.00 to $10.95 per acre for wheat. Although the income per acre is higher for cotton than for wheat, the difference in absolute dollars between the lowest and highest return per acre is $13.97 for cotton and $7.75 for wheat. Consequently, in terms of dollars the income from cotton is more variable than the income from wheat under these assumed conditions.

* The values for intermediate yields were interpolated on the basis of proportionality. That is, the returns for a yield of 120 pounds were calculated as the returns from a yield of 100 pounds plus 40 percent of the difference in the returns of yields of 100 and 150 pounds per acre.

However, for relative comparisons, the percentage variations may be preferable. At the given prices, the lower level of income is 49 percent of the average for cotton while it is 43 percent of the average for wheat. At the other extreme, the higher level of income is 51 percent above the average for cotton while it is 55 percent above the average for wheat. In terms of percentages then, the income from cotton is somewhat less variable than the income from wheat.

With this information and the example, an individual farmer can make estimates for other price relationships or probability levels. Thus, he can have a better estimate of the income variability which may be expected from weather and other natural conditions in Crop Reporting District VII.—*Leo V. Blakley.*

Table 1.—Prices Received by Farmers for Oklahoma Farm Products.
(Dollars)

		Wheat	Corn	Oats	Barley	Rye	Grain sorghum	Cotton-lint	Cotton seed	White potatoes	Sweet potatoes	Soybeans	Peanuts	Alfalfa seed
1951		2.19	1.58	.95	1.32	1.58	1.23	.381	87.42	1.75	2.52	2.78	.099	26.84
1952		2.17	1.79	.97	1.40	1.76	1.51	.336	70.50	2.70	3.66	2.65	.094	24.26
1952	Sept.	2.14	1.79	.99	1.40	1.80	1.68	.371	69.00	3.00	4.25	2.75	.111	18.12
	Oct.	2.13	1.76	.99	1.40	1.85	1.62	.339	72.00	2.75	4.25	2.65	.115	17.28
	Nov.	2.20	1.71	.98	1.45	1.85	1.60	.300	71.00	2.75	4.00	2.52	.111	16.68
	Dec.	2.19	1.68	.97	1.42	1.77	1.60	.290	70.00	2.55	3.85	2.52	.113	15.60
1953	Jan.	2.15	1.66	.97	1.42	1.67	1.57	.280	69.00	2.50	4.25	2.45	.114	16.02
	Feb.	2.10	1.57	.94	1.35	1.65	1.51	.277	69.00	2.40	4.00	2.45	.114	16.20
	Mar	2.14	1.59	.94	1.40	1.65	1.51	.284	68.00	2.30	3.70	2.60	.114	16.32
	Apr.	2.12	1.56	.90	1.30	1.60	1.43	.290	68.00	2.10	3.40	2.25	.114	16.20
	May	2.09	1.59	.87	1.27	1.55	1.37	.293	66.00	1.90	3.40	2.55	.114	16.02
	June	1.86	1.59	.74	1.10	1.40	1.34	.290	64.00	1.50	3.40	2.50	.114	14.70
	July	1.87	1.60	.72	1.09	1.26	1.37	.295	61.00	1.35	3.40	2.45	.114	14.10
	Aug.	1.97	1.58	.77	1.14	1.22	1.37	.295	56.00	1.35	3.40	2.40	.114	14.16
	Sept.	2.03	1.47	.82	1.22	1.35	1.23	.304	52.00	1.35	2.95	2.27	.110	14.70

		All hay	Alfalfa hay	Prairie hay	Cattle	Calves	Sheep	Lambs	Hogs	Wholesale milk	Butterfat	All chickens	Eggs	Turkeys
1951		23.12	29.58	15.28	26.95	31.08	15.76	31.11	20.25	4.99	.64	.227	.416	.306
1952		30.09	37.71	23.71	22.96	25.99	9.91	24.62	18.22	5.41*	.67	.223	.364	.288
1952	Sept.	34.60	43.00	27.00	20.00	23.00	8.60	23.70	19.10	5.70	.68	.233	.443	.280
	Oct.	36.00	45.00	28.00	17.50	19.00	6.50	21.60	18.60	5.95	.66	.227	.440	.310
	Nov.	37.00	45.00	28.50	18.00	19.20	7.00	19.80	16.80	6.05	.64	.215	.474	.320
	Dec.	37.80	46.00	30.00	17.60	19.00	6.80	18.50	16.20	5.95	.63	.212	.503	.320
1953	Jan.	38.30	46.50	30.00	17.70	20.00	7.30	19.80	18.00	5.45	.62	.215	.447	.300
	Feb.	37.10	45.00	29.50	17.70	19.50	7.50	19.70	19.10	5.00	.60	.229	.380	.280
	Mar.	34.30	41.00	27.50	17.00	19.00	8.50	20.20	20.00	4.80	.60	.244	.395	.280
	Apr.	30.40	30.40	24.00	16.40	18.90	9.00	21.40	20.70	4.35	.59	.233	.400	.260
	May	23.00	26.50	20.00	16.20	18.40	7.50	24.50	22.60	4.00	.58	.233	.417	.250
	June	23.80	28.00	17.00	13.20	15.90	5.00	22.60	22.50	4.00	.57	.209	.366	.250
	July	24.20	29.70	18.80	13.60	15.80	4.80	22.70	25.20	4.20	.56	.210	.388	.250
	Aug.	22.10	27.20	17.30	13.50	15.60	5.10	20.80	23.20	4.25	.56	.216	.403	.250
	Sept.	20.40	25.40	16.80	12.60	14.30	4.60	18.40	24.00	4.45	.57	.218	.432	.280

SOURCE: *Prices Received by Farmers,* Bureau of Agricultural Economics, U.S.D.A., Oklahoma City, Oklahoma, Monthly Releases or *Agricultural Prices,* B.A.E., U.S.D.A., Washington, D. C.

* Revised.

Table 2.—Index Numbers of Prices Received by Farmers for Oklahoma Farm Products[1]
(Percent of 1910-14 Average)

		Wheat	Corn	Oats	Barley	Rye	Grain sorghums	Cotton-lint	Cotton-seed	White potatoes	Sweet potatoes	All hay
1951		254	243	212	224	183	181	337	447	158	205	262
1952		252	275	216	237	205	223	299	360	245	297	341
1952	Sept.	249	275	220	238	210	247	328	352	270	345	392
	Oct.	248	271	218	238	215	238	300	368	248	345	408
	Nov.	256	263	218	246	215	235	265	363	248	325	419
	Dec.	255	258	216	241	206	235	257	358	230	313	428
1953	Jan.	250	255	216	241	194	231	248	352	225	345	434
	Feb.	244	242	209	229	192	222	245	352	216	325	420
	Mar.	249	245	209	238	192	222	251	347	207	301	389
	April	246	240	200	220	187	210	257	347	189	276	345
	May	243	245	193	215	180	201	259	337	171	276	261
	June	216	245	164	187	163	197	257	327	135	276	270
	July	217	246	160	185	147	201	261	312	122	276	274
	Aug.	229	243	171	193	142	201	261	286	122	276	250
	Sept.	236	226	182	207	157	181	269	266	122	240	231

		Cattle	Calves	Sheep	Lambs	Hogs	Wholesale milk	Butterfat	All chickens	Eggs
1951		558	521	340	534	288	258	272	241	234
1952		475	435	214	422	259*	280*	287	237	204
1952	Sept.	414	385	186	407	271	295*	290	248	249
	Oct.	362	318	140	370	264	308	282	241	247
	Nov.	373	322	151	340	239	313	273	229	266
	Dec.	364	318	146	318	230	308	269	226	282
1953	Jan.	366	335	157	340	256	282	265	229	251
	Feb.	366	327	162	338	271	259	256	244	213
	Mar.	352	318	184	346	284	249	256	260	222
	April	340	317	195	367	294	225	252	248	225
	May	335	308	162	420	321	207	248	248	234
	June	273	266	108	388	320	207	244	222	206
	July	282	265	103	389	358	218	239	223	218
	Aug.	280	261	111	357	330	227	239	230	226
	Sept.	261	240	100	316	341	230	244	232	243

SOURCE: Compiled by Dept. Agri. Econ., Oklahoma A. & M. College, from data supplied by Bureau of Agricultural Economics, U.S.D.A., Oklahoma City, Oklahoma and Washington, D. C.
For previous years, see Oklahoma Agri. Exp. Sta. Bul. 238, *Oklahoma Farm Price Statistics* and *Current Farm Economics*, Okla. Expt. Sta. series 49, Vol. 13, Nos. 1 and 2, Feb.-Apr., 1940. Tables 16-19, and subsequent issues.

[1] For the index of purchasing power of a unit of an individual commodity in terms of commodities used in farm production and family living, divide the index of price received by Oklahoma farmers (in this table) by the index of prices paid by United States farmers (in Table 4) for the same month and multiply by 100.

* Revised.

Table 3.—Price Indexes of Groups of Oklahoma Farm Products.
(Percent of 1910-14 Average)

		All commodities	Total crops	Grain	Cotton & cottonseed	Misc. crops	Total livestock and L.S. products	Meat animals	Dairy products	Chickens and eggs
1951		334	309	248	348	222	392	482	271	236
1952		305	286	252	304	305	350	414	285	213
1952	Sept.	312	303	251	331	349	334	373	292*	249
	Oct	294	288	249	307	351	308	333	291	246
	Nov.	282	270	254	276	353	309	333	287	256
	Dec.	277	264	252	267	351	306	324	282	267
1953	Jan.	272	258	248	259	358	305	334	271	245
	Feb.	267	254	241	256	345	300	338	257	222
	Mar.	269	257	245	261	321	298	331	254	232
	Apr.	268	258	242	266	288	292	326	243	231
	May	268	256	239	267	238	294	330	234	238
	June	251	246	217	264	232	261	286	231	210
	July	255	248	218	266	230	273	301	234	219
	Aug.	255	249	227	264	218	268	292	233	227
	Sept.	256	253	230	269	201	265	281	239	240

Purchasing Power Indexes[1] of Groups of Oklahoma Farm Products.
(Percent of 1910-14 Average)

		All commodities	Total crops	Grain	Cotton & cottonseed	Misc. crops	Total livestock and L.S. products	Meat animals	Dairy products	Chickens and eggs
1951		117	109	87	122	78	138	169	95	83
1952		106	99	87	106	106	122	143	99*	74
1952	Sept.	108	105	87	114	121	116	129	101*	86
	Oct.	102	100	86	106	122	107	116	101	85
	Nov.	98	94	88	96	123	108	116	100	89
	Dec.	96	92	88	93	122	107	113	98	93
1953	Jan.	95	90	87	91	126	107	117	95	86
	Feb.	95	90	85	91	122	106	120	91	79
	Mar.	95	90	86	92	113	105	116	89	82
	Apr.	94	90	85	93	101	102	114	85	81
	May	94	90	84	94	84	104	116	82	84
	June	88	87	76	93	82	92	101	81	74
	July	89	87	76	93	81	96	106	81	77
	Aug.	89	87	79	92	76	94	102	81	79
	Sept.	90	89	81	95	71	94	99	84	85

SOURCE: Compiled by Dept. Agri. Econ., Okla. A. and M. College, from data supplied by Bureau of Agricultural Economics, U.S.D.A., Oklahoma City, Oklahoma, and Washington, D. C.

[1] The ratio of prices received by farmers to prices paid by farmers for commodities used in farm living and production. For individual commodities see footnote 1 of Table 2.

* Revised.

Table 4.—Index Numbers in the United States, Index of Demand Deposits in Oklahoma, and Oklahoma Price Ratios.

		United States index numbers of:				Index of demand deposits in Oklahoma[2] [3] (1923-25=100)	Oklahoma price ratios[4]			
		Prices received by farmers (1910-14=100)	Prices paid by farmers (1910-14=100)	Wholesale prices (1910-14=100)	Factory payrolls[1] (1947-49=100)		Hog corn	Egg feed	Turkey feed	Milk feed
1948		287	264	241	105.1	353.3	12.69	10.5	8.7	1.343
1949		251	253	226	97.2	347.4	14.97	12.0	9.9	1.569
1950		256	261	236	111.7	346.8	14.21	9.4	7.6	1.442
1951		302	284	262	129.6	273.1	12.82	10.8	8.0	1.509
1952		288	288	251	135.3	293.2	10.20	8.9	7.0	1.505
1952	Sept.	288	289	255	143.3	303.0	10.67	10.6	6.7	1.554
	Oct.	282	288	248	145.7	304.6	10.57	10.8	7.6	1.670
	Nov.	277	287	248	146.3	305.7	9.82	11.6	7.8	1.709
	Dec.	269	287	246	150.9	292.1	9.64	12.4	7.9	1.705
1953	Jan.	267	285	246	148.4	300.4	10.84	11.1	7.5	1.582
	Feb.	263	282	246	149.4	291.7	12.16	9.7	7.2	1.514
	Mar.	264	284	248	151.9	287.5	12.58	10.1	7.1	1.446
	Apr.	259	285	246	150.1	285.9	13.27	10.4	6.8	1.344
	May	261	284	247	150.1	279.7	14.21	11.0	6.6	1.254
	June	259	284	246	----	282.1	14.15	10.1	6.9	1.335
	July	259	285	248	----	291.9	15.75	10.7	6.9	1.479
	Aug.	258	286	248	----	289.2	14.68	11.0	6.8	1.513
	Sept.	256	283	249	----	----	16.33	12.0	7.8	1.597

SOURCE: Indexes of U. S. prices received and prices paid by farmers and indexes of U. S. wholesale prices, from *Agricultural Prices*, Bur. of Agri. Econ., U.S.D.A., Washington, D. C. Indexes of demand deposits in Oklahoma, calculated by Dept. Agri. Econ., Okla. Agri. Exp. Sta. from data furnished by Federal Reserve Board, Washington, D. C. Indexes of factory payrolls, from U. S. Department of Labor, Bureau of Labor Statistics, Washington, D. C.

[1] Unadjusted for seasonal variation.

[2] Demand deposits of Oklahoma member banks of the Federal Reserve System located in places under 15,000 population.

[3] Index numbers based on net demand deposits prior to 1936 and upon gross demand deposits since that date. For a discussion of this index see CURRENT FARM ECONOMICS, Oklahoma Agricultural Experiment Station Series 49, Vol. 13, Nos. 1 and 2. Feb.-Apr., 1940. p. 41.

[4] The number of bushels of corn or pounds of feed which one unit of the commodity (100 pounds of hogs, one dozen eggs, one pound of turkeys or milk) will purchase. Prices used are the official B.A.E. estimates of prices received by Oklahoma farmers except for commercial feeds or ingredients which are official B.A.E. estimates of prices paid by Oklahoma farmers. These ratios are computed on the basis of fixed rations and are not directly comparable with ratios computed from other rations. The composition of each ration used is available upon request.

OKLAHOMA AGRICULTURAL EXPERIMENT STATION
SCIENCE SERVING AGRICULTURE

10-53—3M.